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THE GENUS CLITOCYBE IN NORTH AMERICA

William A. Murrill

(With Plates 164–166)

Before this large and difficult genus is published in *North American Flora*, it is thought advisable to present a preliminary paper which will direct attention to the group and add to our knowledge of it through additional collections and observations.

Species of *Laccaria*, formerly included in *Clitocybe*, have already been treated in *North American Flora*, volume 10, part 1. *Monadelphus* is another small segregate of *Clitocybe*, which is characterized by a densely cespitose, wood-loving hymenophore. The relation of these two genera to *Clitocybe* and to the segregates of *Tricholoma* may be indicated in the following key:

- Lamellae decurrent or adnate.
  - Spores not conspicuously verruculose or echinulate, usually ellipsoid; lamellae decurrent or adnate.
    - Hymenophore usually solitary or gregarious; subcespitose to cespitose but not wood-loving in *C. multiceps* and a few other species. — Clitocybe.
    - Hymenophore densely cespitose and wood-loving, attached to decayed trunks or roots. — Monadelphus.
  - Spores conspicuously verruculose or echinulate, globose; lamellae adnate. — Laccaria.
- Lamellae sinuate; spores usually ellipsoid and smooth.
  - Pileus smooth or inconspicuously decorated with fibrils or scales. — Melanoleuca.
  - Pileus conspicuously decorated with fibrils or scales. — Cortinellus.

EASTERN SPECIES OF CLITOCYBE

Some of the species here included are confined to the eastern United States, while others may occur throughout temperate North America, or even in Europe or Asia. So little is at present known of the Rocky Mountain region, that it will be treated temporarily as a part of eastern North America. The New

York species have been studied very carefully by Dr. Charles H. Peck.

CLITOCYBE ADIRONDACKENSIS (Peck) Sacc. Syll. Fung. **5**: 180. 1887

Agaricus adirondackensis Peck, Ann. Rep. N. Y. State Cab. **23**: 77. 1872.

Common in woods in the Adirondack region of New York, where it was discovered. Very near *C. infundibuliformis,* but distinguished by its narrow, crowded lamellae.

CLITOCYBE ALBIDULA Peck, Ann. Rep. N. Y. State Mus. **46**: 103 (23). 1893

Clitocybe centralis Peck, Ann. Rep. N. Y. State Mus. **53**: 841. 1900.

Described from specimens collected under pine trees at Delmar, New York. It is said to be related to *C. candicans*. Peck reduces *C. centralis* because it " differs from the type only in having the center of the moist pileus sometimes tinged with brown." The species occurs commonly in northern New York in pines or mixed woods and is abundantly represented at Albany.

Clitocybe albo-umbilicata (Hoffm.) comb. nov.

Agaricus umbilicatus Bolt. Hist. Fung. **1**: 36. 1795. Not *A. umbilicatus* Schaeff. 1774.

Agaricus candicans Pers. Syn. Fung. 456. 1801. Not *A. candicans* Schaeff. 1774.

Agaricus albo-umbilicatus Hoffm. Nom. Fung. —. 1789.

Described from Europe and reported from many parts of the eastern United States, occurring among fallen leaves in woods. Peck reports it common in New York, and I have found it plentiful in the Adirondacks.

CLITOCYBE APERTA (Peck) Sacc. Syll. Fung. **5**: 164. 1887

Agaricus (Clitocybe) apertus Peck, Ann. Rep. N. Y. State Mus. **30**: 38. 1878.

Described from Maryland, Otsego County, New York, and found rarely in groups or clusters in grassy ground by roadsides and in pastures. Peck first collected it in quantity and called it *C. dealbata*, a species which it resembles very closely.

CLITOCYBE BIFORMIS Peck, Bull. N. Y. State Mus. 150:25. 1911

Known only from a single collection at North Elba in the Adirondacks, growing in circles or arcs of circles in mixed woods. Not distinct from *C. inversa.*

CLITOCYBE CAESPITOSA Peck, Ann. Rep. N. Y. State Mus. **41**: 61. 1888

Described from the Catskill Mountains, New York, and found afterwards in the Adirondacks. It is a rare species, occurring in clusters in woods, and is remarkable for its irregular and deformed appearance. Specimens at Albany collected in Michigan by Beal resemble a young, subclustered stage of *C. adirondackensis,* and it seems probable that further studies may connect the two species.

CLITOCYBE CATINA (Fries) Quél. Champ. Jura Vosg. 215. 1872

Agaricus (*Clitocybe*) *catinus* Fries, Epicr. Myc. 72. 1838.

Reported once rather doubtfully from the Adirondack Mountains, New York, by Peck, who says that the species is related to *C. infundibuliformis,* but is easily distinguished by its white color. Reported also from Kansas by Bartholomew as occurring in short grass in the open prairie.

CLITOCYBE CHRYSOCEPHALA Sacc. Syll. Fung. **5**: 190. 1887

Agaricus (*Clitocybe*) *auratocephalus* Ellis, Bull. Torrey Club **6**: 75. 1876.

Described from Newfield, New Jersey, occurring there in swampy ground in July. The whole plant is golden-yellow and has a strong, peculiar smell. The spores are short-oblong and 10 μ long, very different from those of *Monodelphus illudens.* I have found no specimens of it in the Ellis collections, at least among the white-spored agarics; it may possibly have been transferred to another series.

CLITOCYBE COLUMBANA (Mont.) Sacc. Syll. Fung. **5**: 142. 1887

Agaricus (*Clitocybe*) *columbanus* Mont. Syll. Crypt. 102. 1856.

Described from specimens collected on naked ground at Columbus, Ohio. The types at Paris are large, closely clustered, and have the appearance of *Clitocybe illudens*, but the sphere are ellipsoid, 7 × 4 μ. The color of the plant when fresh is not stated in the description.

CLITOCYBE CLAVIPES (Pers.) Quél. Champ. Jura Vosg. 48. 1872

Agaricus clavipes Pers. Syn. Fung. 353. 1801.
Agaricus carnosior Peck, Ann. Rep. N. Y. State Cab. **23**: 76. 1872.

This well known edible species was described from Europe and occurs commonly on the ground in woods throughout most of temperate North America south to the mountains of North Carolina and west to Oregon.

CLITOCYBE COMPRESSIPES (Peck) Sacc. Syll. Fung. **5**: 184. 1887

Agaricus (*Clitocybe*) *compressipes* Peck, Ann. Rep. N. Y. State Mus. **33**: 18. 1883.

Described from Albany County, New York, growing in pastures or grassy places and later collected also in Warren County. Peck states that this species is near *C. ditopus*, but is distinguished by its umbilicate pileus and paler or whitish lamellae. Dodge reports it from Wisconsin, occasionally growing in clusters of twenty hymenophores. Compare *Hygrophorus*.

CLITOCYBE CONCAVA (Scop.) Gill. Champ. Fr. 150. 1874

Agaricus concavus Scop. Fl. Carn. ed. 2. **2**: 449. 1772.
Agaricus cyathiformis Fries, Syst. Myc. **1**: 173. 1821. Not *A. cyathiformis* Bull. *pl. 248.* 1785.
Agaricus Poculum Peck, Ann. Rep. N. Y. State Cab. **23**: 77. 1872.

This shapely and easily recognized species was originally described from Paris by Vaillant, but the first binomial was assigned to specimens collected in Carniola. It is widely distributed on decaying wood or on the ground in woods or in mossy fields throughout Europe and the northern part of North America southward to South Carolina and Ohio and westward to Oregon and Bering Strait. The species has many names. That assigned by Fries and generally used is not tenable because it was antedated by Scopoli's name and also because the first plant to which Bulliard's name was assigned was not this species, but a smaller one usually known as *C. metachroa*. See *Clitocybe dicolor.*

CLITOCYBE CONNEXA (Peck) Sacc. Syll. Fung. **5**: 197. 1887

Agaricus (*Clitocybe*) *connexus* Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 45. 1873.

Described from specimens collected on the ground in woods at Croghan, New York. Dodge reports it from Wisconsin in low woods of maple and beech, and says that the pale, sky-blue colors mentioned by Peck are visible only at close range. In a recent bulletin, Peck makes this species a synonym of *C. Trogii* (Fries) Sacc. and says that it is closely allied to *C. virens,* from which it differs in the grayish and more compact pileus and the constantly solid stipe. It is said to have a fragrant, spicy odor.

CLITOCYBE DEALBATA (Sow.) Gill. Champ. Fr. 152. 1874

Agaricus dealbatus Sow. Engl. Fungi *pl. 123.* 1797.

This very common and well known species was described from England and occurs gregariously in open places throughout Europe and temperate North America. *C. sudorifica* Peck and *C. morbifera* Peck appear to be indistinguishable from this species morphologically, and it seems probable that we have to deal here with a species that varies in its physiological effects when ingested.

Clitocybe dicolor (Pers.) comb. nov.

Agaricus cyathiformis Bull. Herb. Fr. *pl. 248.* 1785. Not *A. cyathiformis* Schaeff. 1774.

Agaricus dicolor Pers. Syn. Fung. 462. 1801.
Agaricus metachrous Fries, Syst. Myc. 1: 172. 1821.
Clitocybe metachroa Quél. Champ. Jura Vosg. 216. 1872.

Described from Europe, where it is common in pine woods, and reported once by Peck in pine woods in Albany County, New York. It has also been reported from Maryland and New Brunswick. Hard's Ohio specimens are probably incorrectly determined. Romell has recently collected this species in abundance at Femsjö, Sweden, where it was first known to Fries. Bulliard's plate 248, containing the original description of *A. cyathiformis,* is said by Fries to represent two species, *C. metachroa* and *C. brumalis,* but I prefer to consider it as representing the two stages in *C. metachroa,* showing the change in color both of the surface and the lamellae. *C. brumalis* is very similar to *C. metachroa,* but the lamellae do not change color.

Clitocybe Earlei sp. nov.

Pileus thin, rather tough, convex to expanded, subumbonate, solitary or gregarious, reaching 8 cm. broad; surface glabrous, shining, subhygrophanous, smooth, dark-seal-brown when moist, fuscous when dry, margin entire, concolorous, inflexed; context firm, white with a brownish tint, the taste mild, slightly mawkish, the odor not characteristic; lamellae short-decurrent, several times inserted, some of them forking, densely crowded, narrow, white; spores ellipsoid, smooth, hyaline, 7.5–9 × 5–6.5 μ; stipe subcylindric, enlarged at the base, pallid when young, soon becoming concolorous, solid, smooth, glabrous, reaching 15 cm. long and 1–1.5 cm. thick.

Type collected on the ground in mixed, rocky woods at West Park, New York, August 6, 1903, *F. S. Earle 1753*. Not collected since.

CLITOCYE ECCENTRICA Peck, Bull. Torrey Club 25: 321. 1898

Described from specimens collected on much decayed wood in Vermont and later collected in Connecticut, New York, Pennsylvania, western North Carolina, and Wisconsin. Dodge finds the stipe only slightly eccentric.

CLITOCYBE ECTYPOIDES (Peck) Sacc. Syll. Fung. **5**: 169. 1887

Agaricus (*Clitocybe*) *ectypoides* Peck, Ann. Rep. N. Y. State Mus. **24**: 61. 1872.

Described from Sandlake, New York, and occurring rather frequently on decaying wood in woods from Maine to Alabama and west to Wisconsin. I once made seven collections of it in Maine on dead coniferous wood.

CLITOCYBE ERUBESCENS (Mont.) Sacc. Syll. Fung. **5**: 150. 1887

Agaricus (*Clitocybe*) *erubescens* Mont. Syll. Crypt. 103. 1856. Not *A. erubescens* Fries, 1821:

Described from specimens collected on fallen logs at Columbus, Ohio, by Sullivant. The types at Paris, which are poorly preserved, suggest either a true *Clitocybe* or a species of *Hygrophorus,* near *H. pratensis.* The stipe is thick; the lamellae narrow to broad and distant; and the pileus smooth, viscid, and 2.5 cm. broad in its present dried state. The spores are oblong-ellipsoid, somewhat fusiform, smooth, hyaline, $4\text{--}5 \times 2\text{--}3\,\mu$.

CLITOCYBE FELLEA Peck, Ann. Rep. N. Y. State Mus. **51**: 284. 1898

Found once at Gansevoort, Saratoga County, New York, growing gregariously on the ground in woods. The author cites the pale color, deep umbilicus, and bitter taste as prominent characters. I have not seen this species.

CLITOCYBE FLACCIDA (Sow.) Quél. Champ. Jura Vosg. 329. 1873

Agaricus flaccidus Sow. Engl. Fungi *pl. 185.* 1798. Not *Agaricus flaccidus* Bull. 1788.

Described from England and reported as occurring in pine woods in Massachusetts and Maryland. A study of Sowerby's plate and of specimens at Kew, in connection with specimens collected at Paris, leads me to believe that this is none other than our old friend *C. inversa;* in which case its occurrence in this country is correctly reported.

CLITOCYBE FLAVIDELLA (Peck) Sacc. Syll. Fung. **5**: 197. 1887

Agaricus (Clitocybe) flavidellus Peck, Ann. Rep. N. Y. State Mus. **30**: 38. 1878.

Found only once growing gregariously in wet, swampy ground at Maryland, Otsego County, New York. The type specimens may still be seen at Albany.

CLITOCYBE FUMOSA (Pers.) Quél. Champ. Jura Vosg. 214. 1872

Agaricus fumosus Pers. Syn. Fung. 348. 1801.

Described from Europe as frequent in woods and grassy places, and reported from New England, New York, Pennsylvania, and North Carolina. Bambeke says it sometimes grows in circles. Peck reports it from Albany and Ontario Counties. The specimens at Albany formerly labeled *C. ampla* Pers. are now marked *C. fumosa.*

CLITOCYBE FUSCIPES Peck, Ann. Rep. N. Y. State Mus. **44**: 129 (17). 1891

Found only once under pine trees at Carrollton, Cattaraugus County, New York. The small type specimens are still preserved at Albany.

CLITOCYBE GALLINACEA (Scop.) Gill. Champ. Fr. 150. 1874

Agaricus gallinaceus Scop. Fl. Carn. ed. 2. **2**: 433. 1772.

Described from Carniola and reported once by Peck from the Adirondacks, New York, occurring in grassy or mossy places. Peck states that it has a decidedly acrid taste and strong odor and that its color is dingy-white.

CLITOCYBE GERARDIANA (Peck) Sacc. Syll. Fung. **5**: 181. 1887

Agaricus (Clitocybe) Gerardianus Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 46. 1873.

Described from Sandlake, New York, occurring in sphagnous marshes, and later collected at New Platz, New York. This was transferred to *Omphalia* in 1893, where it seems to belong. Peck says it is related to *C. ectypoides,* but is much more slender and fragile.

CLITOCYBE GIGANTEA (Sow.) Quél. Champ. Jura Vosg. 51. 1872

Agaricus giganteus Sow. Engl. Fungi *pl. 244.* 1800.

Reported from Wisconsin by Dodge, who says it differs from *Clitocybe maxima* in having a much shorter and thicker stipe.

Clitocybe hiemalis nom. nov.

Agaricus brumalis Fries, Obs. Myc. **2**:206. 1818. Not *A. brumalis* Scop. 1772.

Described from Europe and reported by Peck as rare in woods in the Catskills and Adirondacks; also previously reported from North Carolina and Greenland. I found it in abundance in Kew Gardens in November, 1910.

CLITOCYBE HOFFMANI (Peck) Sacc. Syll. Fung. **5**:197. 1887

Agaricus (*Clitocybe*) *Hoffmani* Peck, Ann. Rep. N. Y. State Mus. **24**:60. 1872.

Known only from specimens collected on much decayed wood in woods at Greig, New York. As this species is not mentioned in Peck's recent state list, it may have been transferred by him to some other genus.

CLITOCYBE INFUNDIBULIFORMIS (Schaeff.) Quél. Champ. Jura Vosg. 52. 1872

Agaricus infundibuliformis Schaeff. Fung. Bavar. **4**: Ind. 49. 1774.

This extremely common species was originally described from Europe and occurs among fallen leaves in woods throughout eastern temperate North America westward as far as Iowa and Kansas. The plant tends to assume somewhat darker colors in Europe, so far as I have observed.

CLITOCYBE INVERSA (Scop.) Quél. Champ. Jura Vosg. 214. 1872

Agaricus inversus Scop. Fl. Carn. ed. 2. **2**:445. 1772.

Agaricus gilvus Pers. Syn. Fung. 448. 1801.

Clitocybe maculosa Peck, Bull. Buffalo Soc. Nat. Sci. **1**:45. 1873.

Agaricus (*Clitocybe*) *subzonalis* Peck, Bull. Buffalo Soc. Nat. Sci. **1**:46. 1873.

Clitocybe biformis Peck, Bull. N. Y. State Mus. 150:25. 1911.

This large and handsome species was described from Carniola and occurs in humus in woods or groves throughout Europe and the northern United States, having been collected rather commonly in Maine, New York, Washington, and Oregon. In Paris, the writer once found it growing in the greatest profusion beneath the giant cedar of Lebanon at the south end of the Jardin des Plantes. The species must have been very familiar to Bulliard, who figured it in his plate 553 under the name of *Agaricus infundibuliformis,* one of its many appellations. *C. geotropa* is said to have spores 6–7 × 4–5 μ, while those of *C. inversa* are 4.5–5 × 3–4 μ.

CLITOCYBE LEPTOLOMA Peck, Bull. N. Y. State Mus. 157:68. 1912

Agaricus (*Clitocybe*) *leptolomus* Peck, Ann. Rep. N. Y. State Mus. **32**:26. 1880.

Described from specimens on decaying prostrate trunks in woods at Indian Lake in the Adirondack Mountains, New York. It is reported as uncommon and no other locality is cited for the species. It is said to differ from *C. truncicola* in having a hygrophanous, umbilicate pileus.

CLITOCYBE MACULOSA (Peck) Sacc. Syll. Fung. **5**:183. 1887

Agaricus (*Clitocybe*) *maculosus* Peck, Bull. Buffalo Soc. Nat. Sci. **1**:45. 1873. Not *A. maculosus* Pers. 1801.

Described from specimens collected on the ground in woods at Croghan, New York. Not distinct from *C. inversa.*

CLITOCYBE MAXIMA (Gärtn. & Meyer) Quél. Champ. Jura Vosg. 51. 1872

Agaricus maximus Gärtn. & Meyer, Fl. Wett. 3^2:329. 1802.

I examined this species in the Hooker herbarium at Kew and elsewhere, but found no specimens from America and its occurrence here must be considered doubtful, although it has been reported from Minnesota, Massachusetts, California, and elsewhere. Peck says it is rare in the Adirondacks and Catskills, occurring in woods and grassy places, and that it is easily recognized by its large size. Dodge reports it from Wisconsin.

CLITOCYBE MEDIA Peck, Ann. Rep. N. Y. State Mus. **42**: 114 (18). 1889

Described from North Elba in the Adirondack Mountains, New York, occurring there rarely on mossy ground in woods, and later reported from Wisconsin. Peck considers it intermediate between *C. nebularis* and *C. clavipes,* but it certainly approaches the latter species very closely.

CLITOCYBE MEGALOSPORA Clements, Bot. Surv. Neb. **4**: 18. 1896

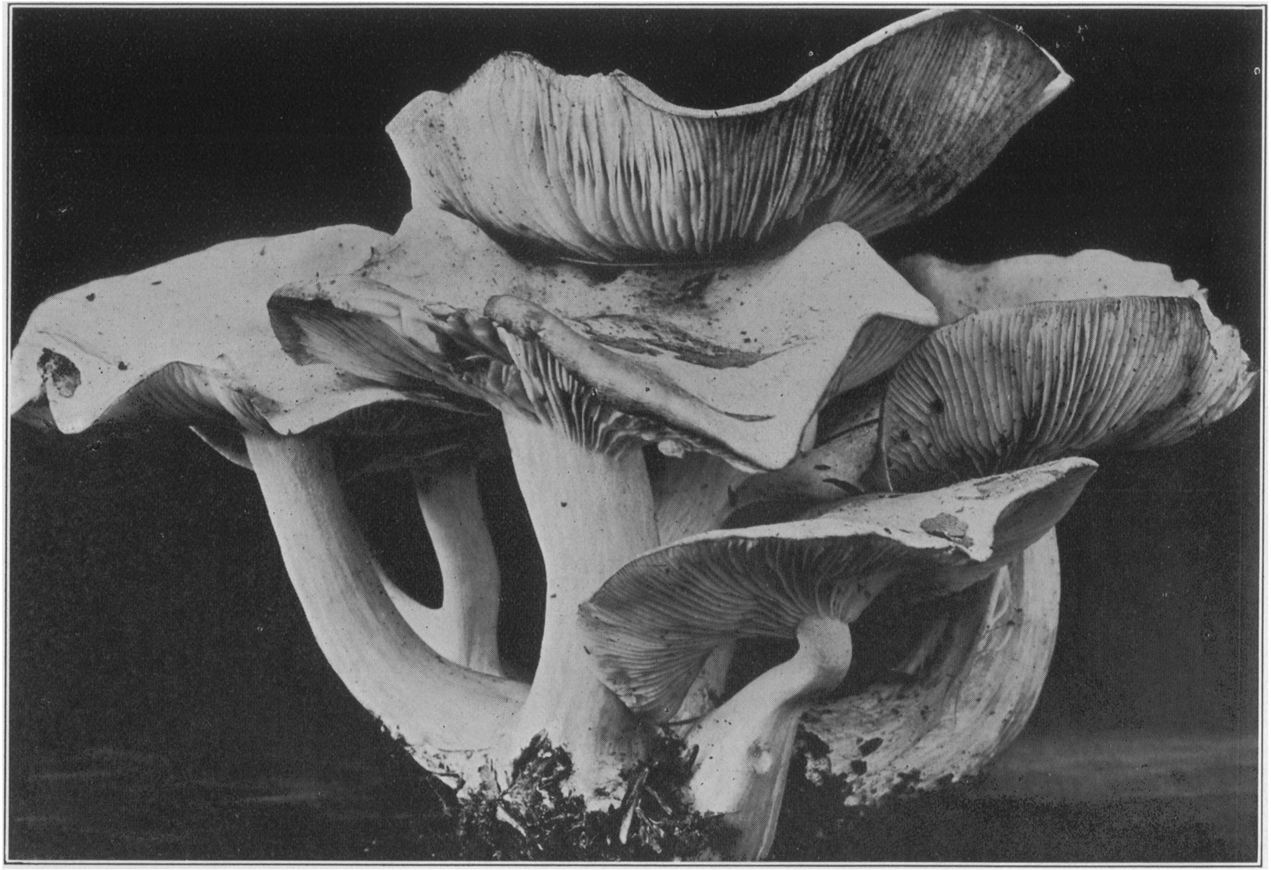
Not a species of *Clitocybe.* See *Mycologia* **7**: 157. 1915.

CLITOCYBE MORBIFERA Peck, Bull. Torrey Club **25**: 231. 1898

Described from specimens collected on grassy ground and lawns at Washington, D. C., by F. J. Braendle. The taste is reported as very disagreeable and persisting for a long time. Two by Dr. Fischer from Detroit, Michigan, and in both cases sickness lasting about three hours. In Bulletin 150, Peck reports specimens sent by Dr. Whetstone from Minneapolis, Minnesota, and by Dr. Fischer from Detroit, Michigan, and in both cases sickness was produced after the fungus had been eaten in quantity. Dr. Peck concludes that although *C. morbifera* is scarcely distinguishable morphologically from *C. sudorifica* the ill effects of the former are much more serious and uncomfortable than those of the latter species. Specimens of *C. dealbata* collected at Seattle were compared at Albany with specimens of *C. morbifera* collected by Dr. Whetstone in Minnesota in 1905, and found to agree in every particular.

CLITOCYBE MULTICEPS Peck, Ann. Rep. N. Y. State Mus. **43**: 17. 1890

This large and important edible species was originally described from Albany and Sandlake, New York, occurring in open grassy places in late spring or early summer and again in the



CLITOCYBE MULTIFORMIS PECK

autumn. It has been described and twice figured in *Mycologia.* Sometimes the lamellae are adnexed or slightly sinuate, suggesting *Melanoleuca.* The species is known to occur in many parts of the eastern United States from Canada to New Jersey, and it may possibly extend westward to Washington. It is very abundant in some localities in the vicinity of New York City. By removing pieces of sod containing the mycelium, it is possible to transplant it rather easily, and it increases rapidly when once established in a lawn.

CLITOCYBE MULTIFORMIS Peck, Mem. N. Y. State Mus. **3**: 141. 1900

Described from several specimens collected at one time in Albany County, New York, growing in a low damp place in woods. Although a prominent species and well illustrated by Peck, it has not been reported since. It is said to be smaller and thinner than *Clitocybe multiceps,* although similar in habit and edible. The pileus is whitish, grayish, or yellowish when moist becoming paler when dry. What appears to be this species was twice collected at Stockbridge, Massachusetts, by Dr. W. Gilman Thompson and myself early in October, 1911. (*pl. 164*).

CLITOCYBE NOBILIS Peck, Bull. Torrey Club **34**: 97. 1907

Described and known only from specimens collected on humus and buried wood at Deer Lake, Ontario, by C. Gillet. The type specimens at Albany appear quite distinct, with particularly long stipes.

CLITOCYBE PELTIGERINA (Peck) Sacc. Syll. Fung. **5**: 184. 1887

Agaricus (*Clitocybe*) *peltigerinus* Peck, Ann. Rep. N. Y. State Mus. **30**: 38. 1885.

This rare species was described from specimens collected on decaying *Peltigera* at Oneida, New York, and afterwards found at North Greenbush, New York. The minute type specimens may be seen at Albany.

CLITOCYBE PHYLLOPHILA (Pers.) Quél. Champ. Jura Vosg. 49. 1872

Agaricus phyllophilus Pers. Syn. Fung. 457. 1801.

This species was described from Europe and is reported by Peck as rare in Albany County; and also by other mycologists from Massachusetts, North Carolina, Ohio, Indiana, Minnesota, and Wisconsin. I have a number of recent collections of the plant from Vermont, Massachusetts, and New York. It occurs among sticks and leaves on the ground in woods.

CLITOCYBE PHYLLOPHILOIDES Peck, Bull. N. Y. State Mus. 167: 19. 1915

Described from specimens collected among fallen leaves in spruce woods at Constableville, New York. The types have not been examined.

Clitocybe pileolaria (Bull.) comb. nov.

Agaricus pileolarius Bull. Herb. Fr. *pl. 400.* 1788.
Agaricus nebularis Batsch, Elench. Fung. Contin. **2**: 25. 1789.
Agaricus mollis Bolt. Hist. Fung. **1**: 63. 1795.
Clitocybe nebularis Quél. Champ. Jura Vosg. 48. 1872.

Originally described from France, occurring among dead leaves in woods, and very well figured by Bulliard, as well as by Barla, Bresadola, Fries, Hussey, Bolton, and others. Peck's figures in Report 48 are not suggestive of the European plant, and the spores of his specimens are $4–6 \times 2–3\ \mu$, while those of the European plant are $8–10 \times 5–7\ \mu$. The species has been reported from Canada to North Carolina and west to the Rocky Mountains, and there are many specimens so named at Albany, but apparently there remains much to be determined regarding its occurrence in this country.

CLITOCYBE PINIARIA (Bosc) Sacc. Syll. Fung. **5**: 148. 1887

Agaricus piniarius Bosc, Ges. Nat. Freunde Berlin Mag. **5**: 84. 1811.
Agaricus (*Clitocybe*) *piniarius* Fries, Epicr. Myc. 59. 1838.

Described and known only from specimens collected in pine woods in South Carolina. Fries did not see these specimens.

CLITOCYBE PINOPHILA (Peck) Sacc. Syll. Fung. **5**: 183. 1887

Agaricus (*Clitocybe*) *pinophilus* Peck, Ann. Rep. N. Y. State Mus. **31**: 32. 1879.

Described from Albany, New York, occurring rarely under or near pine trees, and reported later from Essex and Warren Counties, New York.

CLITOCYBE PITHYOPHILA (Fries) Gill. Champ. Fr. 152. 1874

Agaricus (*Clitocybe*) *pithyophilus* Fries, Syst. Myc. **1**: 83. 1821.

Described from Europe and reported from New England, New York, and Ohio, usually occurring in pine woods. Hard gives a good illustration of this species in his recent work.

CLITOCYBE PORPHYRELLA (Berk. & Curt.) Sacc. Syll. Fung. **5**: 196. 1887

Agaricus (*Clitocybe*) *porphyrellus* Ann. Mag. Nat. Hist. III. **4**: 284. 1859.

Described from specimens collected in leaf-mold in Connecticut by Wright. The types at Kew are old and unreliable for comparison. The pale-purple color of the entire plant would seem to suggest *Mycena pura* or one of the species of *Laccaria*.

CLITOCYBE PRUINOSA Lovejoy, Bot. Gaz. **50**: 384. 191C.
Not *Clitocybe pruinosa* (Lasch) Quél. 1872

Described from specimens collected in open pine woods at Foxpark, Wyoming, August 14, 1909. The pileus is described as 3.5 cm. wide, smooth, and rich-reddish-brown over salmon; the lamellae as salmon-yellow, crowded, and very decurrent; and the spores as globose, spiny, 7–10.5 μ. This would seem to indicate a species of *Laccaria* if the lamellae were not so decurrent. Its relationship may be with *C. sinopica*.

CLITOCYBE PULCHERRIMA Peck, Jour. Myc. **14**: 1. 1908

Described from specimens collected by Dr. O. E. Fischer among fallen leaves near Detroit, Michigan. The types of this beautiful, lemon-yellow species are at Albany.

CLITOCYBE RADIOZONARIA (Johnson) Sacc. Syll. Fung. **9**: 20. 1891

Agaricus (*Clitocybe*) *radiozonarius* Johnson, Bull. Minn. Acad. Sci. **1**: 214. 1887.

Described from Minnesota, occurring on decaying fallen branches and stumps in June. The specimens are lost, but the description resembles that of *Crinipellis zonata.*

Clitocybe rancidula (Banning & Peck) comb. nov.

Tricholoma rancidulum Banning & Peck; Peck, Ann. Rep. N. Y. State Mus. **44**: 179 (67). 1891.

Known only from specimens collected in vegetable mold in Druid Hill Park, Baltimore, Maryland, by Miss Banning. The lamellae are slightly decurrent and very narrow and crowded. The plant is larger than *T. personatum,* the stipe is not bulbous, and the margin of the pileus is finely striate for about 2 cm. Its odor is very rancid, whence the name.

CLITOCYBE REGULARIS Peck, Bull. N. Y. State Mus. **10**: 948. 1902

Described from specimens collected among fallen leaves in woods at Bolton, New York. Specimens recently collected at Austin, Texas, by F. McAllister appear to correspond to the New York specimens in every particular.

CLITOCYBE RIVULOSA (Pers.) Quél. Champ. Jura Vosg. 214. 1872

Agaricus rivulosus Pers. Syn. Fung. 369. 1801.

Described from Europe and twice reported by Peck from the Adirondacks. It was also reported from the Antilles by Fries in 1851.

CLITOCYBE ROBUSTA Peck, Ann. Rep. N. Y. State Mus. **49**: 17. 1897

Described from the Catskill Mountains and found several times since in New York, growing among fallen leaves in woods. It has been reported from as far south as Maryland and as far west as Wisconsin. *Clitocybe candida* Bres. has been confused with this species.

CLITOCYBE SETISEDA (Schw.) Sacc. Syll. Fung. **5**: 176. 1887

Agaricus (*Omphalia*) *setisedus* Schw. Schr. Nat. Ges. Leipzig **1**: 88. 1822.

Agaricus (*Clitocybe*) *setisedus* Fries, Epicr. Myc. 73. 1836.

Described from North Carolina, occurring among fallen leaves. I have seen no specimens.

CLITOCYBE SINOPICA (Fries) P. Karst. Bidr. Finl. Nat. Falk **32**: 73. 1879

Agaricus sinopicus Fries, Obs. Myc. **2**: 197. 1818.

Described from Europe and frequent in woods and on burned ground in open places throughout most of temperate North America, having been found as far south as Tennessee and South Carolina and west to the Pacific coast. *Clitocybe Arnoldi* Boud. is only a variety of this species. *Agaricus* (*Tricholoma*) *Sienna* Peck also appears to be a large form of the same plant. *Clitocybe subconcava* Peck is very near.

CLITOCYBE SINOPICOIDES Peck, Bull. N. Y. State Mus. 157: 80. 1912

Described from the Adirondacks, occurring there among mosses in low, wet places. Peck says it differs from *C. sinopica* in its habitat, smaller size, and smaller spores, but all these differences appear to me to be very slight. I have some small specimens collected in Maine which Bresadola pronounced "not *sinopica*," but which correspond to specimens at Albany determined as *C. sinopica*. Bresadola's idea of *C. sinopica* is a rather large plant with a much thicker stipe than is usually seen in our American specimens.

CLITOCYBE SOCIALIS (Fries) Sacc. Syll. Fung. **5**: 149. 1887

Agaricus socialis Fries, Hymen. Eur. 83. 1874.

Reported by Moffatt as occurring among dead leaves on a wooded hillside in the vicinity of Chicago, Illinois. He says that it is remarkable for its very acute umbo, and that the spores are globose, echinulate, 9–10 μ. I have not seen his specimens.

CLITOCYBE SPLENDENS (Pers.) Gill. Champ. Fr. 139. 1874

Agaricus splendens Pers. Syn. Fung. 452. 1801.

Described from Europe and reported by Peck as rare among fallen leaves in woods in the Adirondacks. It is very probable that American specimens bearing this name may all be referred to *C. sinopica, C. subsquamata,* or *C. inversa.*

CLITOCYBE SUBCONCAVA Peck, Bull. N. Y. State Mus. **54**: 948. 1902

Described from Bolton, New York, growing in pine woods. There are seven specimens on the type sheet at Albany, but the species has not been reported since. It should be carefully compared with forms of *C. sinopica.*

Clitocybe subconnexa sp. nov.

Pileus convex to expanded, rather thin, very tender and fragile, somewhat cespitose, reaching 9 cm. broad; surface smooth, dry, glabrous, milk-white; margin very thin, concolorous, entire, strongly incurved on drying; context thin, white, fragile, with pleasant odor and taste; lamellae short-decurrent or adnate, narrow, white, exceedingly crowded, several times inserted; spores ellipsoid, smooth, hyaline, 5 × 3.5 μ; stipe fleshy, subequal, smooth, glabrous, white, hollow, 5–7 cm. long, reaching 1.5 cm. thick.

Type collected in rich soil under trees in the New York Botanical Garden, September 26, 1911, *W. A. Murrill.* Also collected in the grass near the herbaceous nursery of the New York Botanical Garden, September 25, 1907, *R. C. Benedict.* This species somewhat resembles *C. multiceps* but it is thinner and more fragile and the lamellae are much more crowded.

CLITOCYBE SUBCYATHIFORMIS Peck, Bull. N. Y. State Mus. 122: 136. 1908

Described from specimens collected among fallen leaves under alders and birches in Albany and Warren Counties, New York. It is said to be rare. The species is well illustrated, and the types, which somewhat resemble *C. infundibuliformis,* are at Albany.

CLITOCYBE SUBDITOPODA Peck, Ann. Rep. N. Y. State Mus. **42**: 114 (18). 1889

Originally collected in mossy ground in woods in the Adirondack Mountains at North Elba, New York, and reported by Peck as rare. I collected the species near Lake Placid in July and in October, 1912. Peck says it differs from *C. ditopoda* Fries in its umbilicate pileus, striate margin, and broader, paler lamellae.

CLITOCYBE SUBHIRTA Peck, Bull. N. Y. State Mus. 1^2: 11. 1888

Agaricus (*Clitocybe*) *subhirtus* Peck, Ann. Rep. N. Y. State Mus. **32**: 25. 1880.

Described from specimens collected at Brewerton, New York, occurring there on the ground in woods. There are four good specimens on the type sheet at Albany. The lamellae are broad and have a peculiar rosy-cream color as in some species of *Russula.* Specimens collected at Stockbridge, Massachusetts, in October, 1911, seem to correspond exactly with the types. In my field notes, I remark that the lamellae are sinuate and that the plant is probably a *Melanoleuca.*

Clitocybe submarmorea nom. nov.

Agaricus (*Clitocybe*) *marmoreus* Peck, Ann. Rep. N. Y. State Mus. **24**: 61. 1872. Not *A. marmoreus* Lam.

This large, cespitose species was described from specimens found on prostrate trunks of trees in woods at Greig, New York, and has not been reported since. The clusters are composed of few individuals. There are two specimens at Albany, accompanied by an excellent sketch. The surface is represented as white mottled with darker, watery spots.

CLITOCYBE SUBNIGRICANS Peck, Bull. N. Y. State Mus. 150: 51. 1911

Described from specimens collected by G. B. Fessenden, at Rye Beach, New Hampshire. The types at Albany have not been examined. Reported by the author as a fine species, easily distinguishable by its strong odor and the blackening of the lamellae and stipe when bruised or on drying.

CLITOCYBE SUBSIMILIS Peck, Ann. Rep. N. Y. State Mus. **41**: 61. 1888

Described from specimens collected under pine trees in the Catskill Mountains, New York. After examining the excellent type specimens at Albany, I have referred the species to *Melanoleuca albissima* (Peck) Murrill.

Clitocybe subsquamata nom. nov.

Agaricus squamulosus Pers. Syn. Fung. 449. 1801. Not *A. squamulosus* Bull. 1785.

Described from Europe, where it is rare, and occurring frequently in the Adirondacks, usually under pines. The spores measure 5–7 × 3–5 µ. Care must be taken not to confuse this species with *C. sinopica.*

CLITOCYBE SUBZONALIS (Peck) Sacc. Syll. Fung. **5**: 184. 1887

Agaricus (*Clitocybe*) *subzonalis* Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 46. 1873.

Described from specimens collected on the ground in woods at Croghan, New York. Not distinct from *C. inversa.*

CLITOCYBE SUDORIFICA Peck, Bull. N. Y. State Mus. 157: 67. 1912

Clitocybe dealbata sudorifica Peck, Bull. N. Y. State Mus. 150: 43. 1911.

First described as a variety of *C. dealbata* from specimens collected in grassy ground at Saratoga, New York, by F. G. Howland. It has been collected in two or three other localities in Albany and Ontario Counties. Mr. Howland, Dr. Peck, and Dr. W. W. Ford all agreed that this mushroom was decidedly sudorific and unwholesome, differing decidedly in this respect from the reputation enjoyed by *C. dealbata.* I have examined the types, however, and can see no morphologic difference between the two plants. They both grow gregariously in exposed grassy places and the best observer could not tell them apart. See notes on *C. morbifera* Peck.

CLITOCYBE SULPHUREA Peck, Ann. Rep. N. Y. State Mus. **41**: 62. 1888

Described and known only from specimens collected on decaying wood of spruce and balsam fir on Wittenberg Mountain in the Catskills, New York. There are five rather young specimens on the type sheet at Albany. They appear to be related to *Cortinellus decorus,* but the surface is not squamulose.

CLITOCYBE TRULLISATA (Ellis) Sacc. Syll. Fung. **5**: 195. 1887

Agaricus (*Clitocybe*) *trullisatus* Ellis, Bull. Torrey Club **5**: 45. 1874.

Described from specimens collected in an old sandy field at Newfield, New Jersey, and later reported in sandy soil in Suffolk, Nassau, Madison, and Albany Counties, New York. Peck remarks that the species resembles larger forms of *Laccaria laccata,* but it has a stouter habit, the pileus is more squamulose, the stipe is bulbous, the mycelium violet-colored, and the spores oblong. The spores are described as oblong or cylindric, smooth, granular within, 15–20 × 8–9 μ.

Clitocybe tenebricosa sp. nov.

Pileus convex, becoming depressed at the center with the margin upturned, gregarious, reaching 6 cm. broad; surface smooth, white, glabrous; context white, rather thin, without characteristic odor; lamellae crowded, somewhat ventricose, short-decurrent, inserted, white; spores globose, smooth, hyaline, 4–6 μ; stipe subfusiform, hollow, smooth, white, glabrous, reaching 12 cm. long and 2 cm. thick. (*pl. 165*).

Type collected September 25, 1908, by *George H. Plass* on the side of a trench under the museum building of the New York Botanical Garden, growing out between brickwork in total darkness, evidently arising from soil, as no wood was present. This species suggests one found by Miss Banning growing in cluster on a brick wall in a cellar at Baltimore, Maryland, and named by her *Agaricus* (*Tricholoma*) *cellaris,* but I believe the description was never published. The spores of Miss Banning's plant seem quite different from those of the species described above.

CLITOCYBE TRUNCICOLA (Peck) Sacc. Syll. Fung. **5**: 184. 1887

Agaricus (*Clitocybe*) *truncicola* Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 46. 1873.

Described from Croghan, New York, and said to be rare except in the Adirondack Mountains, occurring on the trunks of deciduous trees, especially those of the sugar maple.

CLITOCYBE VILESCENS (Peck) Sacc. Syll. Fung. **5**: 184. 1887

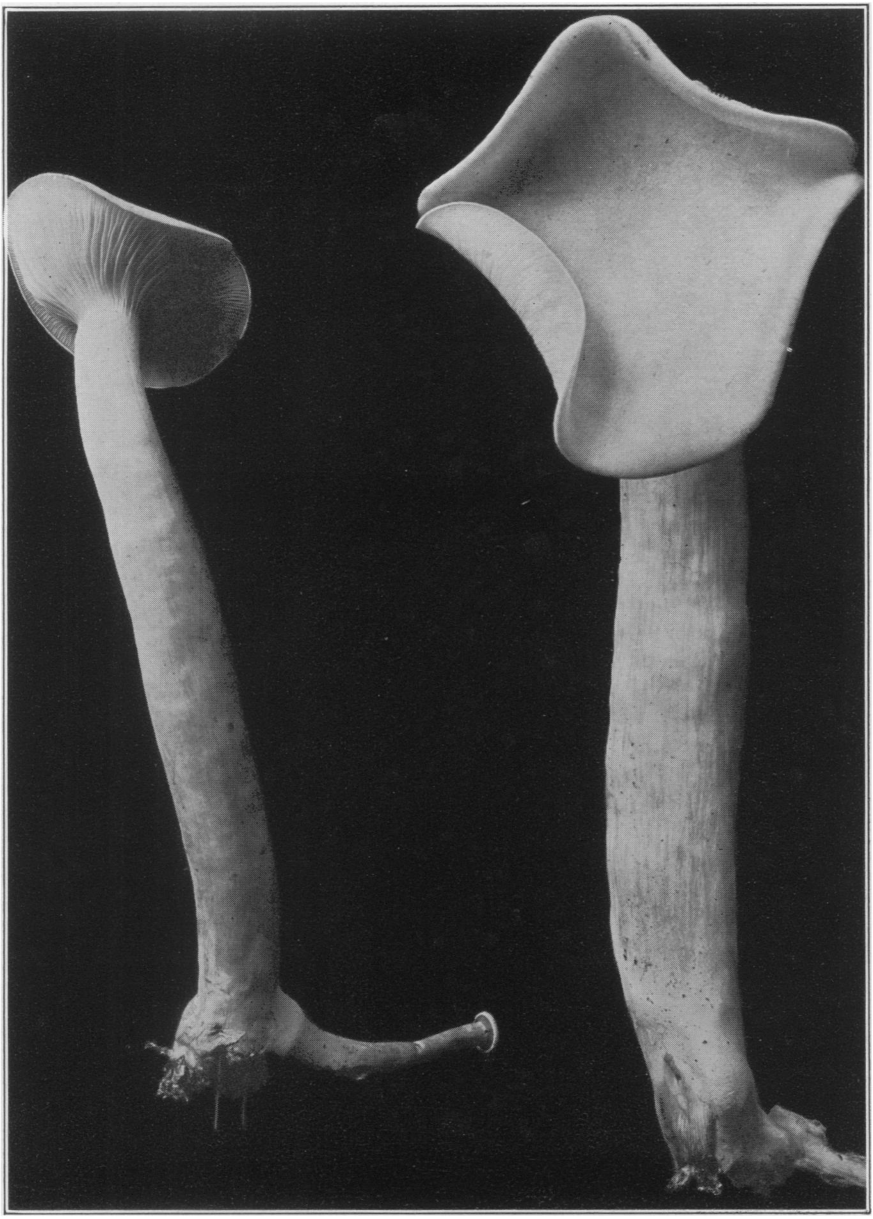
Agaricus (*Clitocybe*) *vilescens* Peck, Ann. Rep. N. Y. State Mus. **33**: 19. 1883.

Described from specimens collected in grassy pastures at Jamesville, New York, and reported later as occurring rarely in bushy places and pastures in Albany and Onondaga Counties. In describing a pale form occurring in the sand, Peck states that the flavor is mild and agreeable.

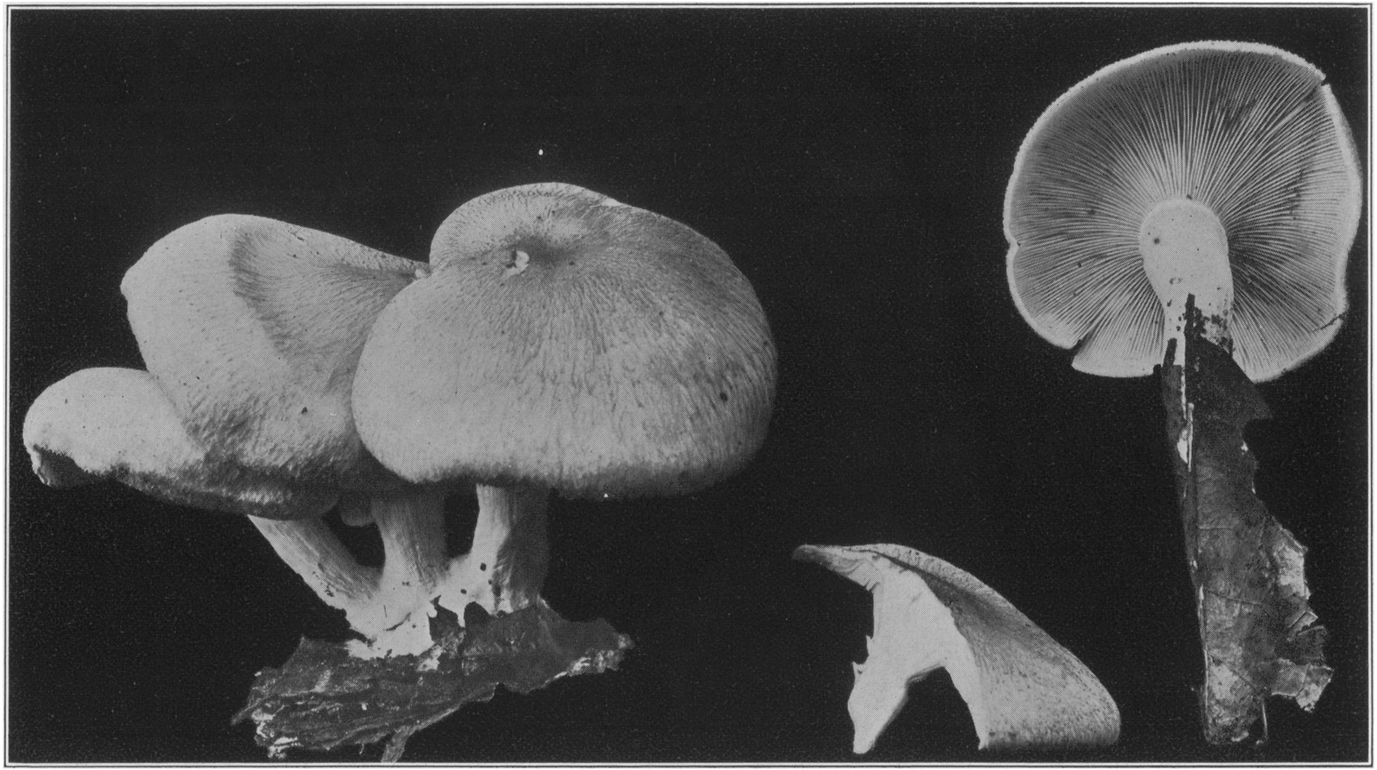
CLITOCYBE VIRENS (Scop.) Sacc. Syll. Fung. **5**: 152. 1887

Agaricus virens Scop. Fl. Carn. ed. 2. **2**: 437. 1772.
Agaricus odorus Bull. Herb. Fr. *pl. 176.* 1783.
Agaricus viridis Huds. Fl. Angl. ed. 2. **1**: 614. 1778.
Agaricus (*Clitocybe*) *anisarius* Peck, Ann. Rep. N. Y. State Mus. **32**: 26. 1879.

Described from Carniola and found commonly in open woods and bushy places throughout Europe and in the eastern United



CLITOCYBE TENEBRICOSA MURRILL



CLITOCYBE VIRENS (SCOP.) SACC.

States from Maine to North Carolina and west to Michigan. *C. odora* and *C. virens* are still kept distinct at Paris, probably following the opinion of Fries, but in England and America the two are considered synonyms. The specimens, descriptions, and illustrations everywhere agree, so far as I have examined them. The plant appears each season in the New York Botanical Garden among dead leaves in the edges of deciduous woods. Owing to its brilliant coloring and agreeable odor, it is decidedly attractive when young and fresh, but it is apt to fade with age and become confused with other species. (*pl. 166*).

COLLYBIA AQUOSA ADNATIFOLIA Bull. N. Y. State Mus. **2**: 25. 1887

Peck states in his 49th report that this variety is probably a *Clitocybe*.

TRICHOLOMA CELLARE Banning & Peck; Peck, Ann. Rep. N. Y. State Mus. **44**:179 (67). 1891

This name was published by Peck without description or comment, although Miss Banning's manuscript drawing and notes are quite complete. The lamellae being decurrent, the plant is a *Clitocybe;* or, if it grows on wood, a *Monadelphus*.

TRICHOLOMA SIENNA (Peck) Sacc. Syll. Fung. **5**:137. 1887

Agaricus (*Tricholoma*) *Sienna* Peck, Ann. Rep. N. Y. State Mus. **24**: 60. 1872.

Described from specimens collected on the ground in woods at Greig, New York, and apparently not reported since. A good drawing accompanies the types at Albany, and there is little doubt that this species is only a rather large form of *Clitocybe sinopica*.

WESTERN SPECIES OF CLITOCYBE

The genus *Clitocybe* is abundantly represented on the Pacific coast, where the author in 1911 discovered many novelties. The following 21 new species from Washington, Oregon, and California were published in *Mycologia* for July, 1913: *Clitocybe albicastanea, C. albiformis, C. atrialba, C. avellaneialba, C. brunnescens, C. cuticolor, C. griseifolia, C. Harperi, C. hondensis, C. murinifolia, C. oculata, C. oreades, C. oregonensis, C. Peckii, C. stipitata, C. subcandicans, C. subinversa, C. subfumosipes, C. variabilis, C. violaceifolia,* and *C. washingtonensis.*

A number of additional interesting specimens have only recently been sent in from the Pacific coast, which indicates that the field is by no means exhausted.

CLITOCYBE CLAVIPES (Pers.) Quél. Champ. Jura Vosg. 48. 1872

An excellent specimen of this species was sent me in November, 1913, by Dr. H. D. House from Marshfield, Oregon. It was collected in fir woods in that locality by Mr. W. Haydon and marked number 21.

CLITOCYBE DICOLOR (Pers.) Murrill, Mycologia **7**: 260. 1915

This species was collected by Macoun on St. Paul Island, Bering Sea.

CLITOCYBE DEALBATA (Sow.) Gill. Champ. Fr. 152. 1874

This species is common in grassy places and seems to be about the same as in the eastern United States, only a little larger and with the lamellae usually somewhat more distant. It was sometimes found growing in rings.

Seattle, Washington, *Murrill 402, 513;* Tacoma Prairies, Washington, *Murrill 710;* Corvallis, Oregon, *Murrill 953, 1003;* Newport, Oregon, *Murrill 1045;* Berkeley, California, *Yates 84, 60;* Golden Gate Park, California, *Murrill 1115;* Marin County, California, *Alice Eastwood 35;* Presidio, California, *Harper 65;* Stanford University, California, *Dudley 188, 322, McMurphy 159.*

CLITOCYBE INVERSA (Scop.) Quél. Champ. Jura Vosg. 214. 1872

This species is very abundant in Washington and Oregon, occurring especially in coniferous woods. In one locality near Seattle, I found seventy plants growing in a perfect ring six feet in diameter. The hymenophore is very variable in color, ranging from pale-yellow to orange; the taste is astringent and unpleasant at first, soon becoming nutty and less unpleasant, though the astringent effects remain.

Seattle, Washington, *Murrill 382, 390, 406, 408, 458, 613, 668, Zeller 24;* Newport, Oregon, *Murrill 1072, 1091;* Salem, Oregon, *M. E. Peck;* Seaside, Oregon, *House 12.92;* Portola, California, *McMurphy 50.*

CLITOCYBE MICROSPORA Peck, Bull. Torrey Club **36**: 331. 1909

Described from specimens collected by C. F. Baker at Claremont, California, in January. Peck says it is related to *C. eccentrica,* but is larger, with less crowded lamellae, hollow stipe, smaller spores, and the pileus never umbilicate.

CLITOCYBE PUSILLA Peck, Bull. Torrey Club **22**: 199. 1895

Known only from specimens collected by McClatchie on manure at Pasadena, California, February 15, 1895. The type, or at least a portion of it, is in McClatchie's herbarium at the New York Botanical Garden, numbered 879.

CLITOCYBE SINOPICA (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 73. 1879

I found this species both in woods and in open fields. Its farinaceous odor was very distinct. The colors of the pileus and stipe were found to vary considerably.

Seattle, Washington, *Murrill 300b, 302, 312, 441, 509, 555, 639;* Corvallis, Oregon, *Murrill 947;* Calaveras Grove, California, *Hutchings 197.*

CLITOCYBE SUBSOCIALIS Peck, Bull. Torrey Club **23**: 411. 1896

Described from specimens collected by Yeomans on grassy ground at Camas, Washington, in December. Peck remarks that it is closely related to *C. socialis,* but differs in its strong odor, squamulose pileus, and white lamellae. The types at Albany very much resemble *C. sinopica,* but Peck says they differ from this species in their squamulose surface, although resembling it in color.

TROPICAL SPECIES OF CLITOCYBE

Six new species of *Clitocybe* from tropical North America were described in *Mycologia* for July, 1911. The list includes *Clitocybe Broadwayi,* from Grenada; *C. incrustata,* from Chester Vale, Jamaica; *C. mexicana,* from Jalapa, Mexico; *C. niveicolor,* from Motzorongo, Mexico; *C. testaceoflava,* from Cinchona, Jamaica; and *C. troyana,* from Troy and Tyre, Jamaica.

Clitocybe rivulosa (Pers.) Quél. was reported from the West Indies by Fries, but no specimens from tropical America have been found in any of the European herbaria. *Clitocybe rubrotincta* (Berk. & Curt.) Sacc., described from Cuba, is probably referable to *Mycena.* There is a large, thick plant at Kew from Cuba bearing the name *Agaricus* (*Clitocybe*) *pachylus* Berk. & Curt., which is probably undescribed.

EUROPEAN SPECIES REPORTED IN AMERICA

Clitocybe aggregata (Schaeff.) Gill. Reported from Rhode Island by Bennett.

Clitocybe angustissima (Lasch) Gill. Reported by Peck as rare in New York.

Clitocybe candida Bres. Reported from New York but doubtless confused with *C. robusta* Peck.

Clitocybe cerussata (Fries) Quél. Reported by Peck as occurring rarely in the Adirondacks, as well as in certain other localities in America.

Clitocybe difformis (Schum.) Gill. Reported once from New York by Peck. It has usually been regarded as a form of *C. cerussata.*

Clitocybe ditopoda (Fries) Gill. Reported by Peck as rare in New York.

Clitocybe ectypa (Fries) Gill. Reported from Alabama by Atkinson.

Clitocybe elixa (Sow.) P. Karst. Reported from Massachusetts and Rhode Island.

Clitocybe fragrans (Sow.) Quél. Reported by Peck as rare in New York. Also reported from North Carolina and California.

Clitocybe geotropa (Bull.) Quél. Reported from Massachusetts, Wisconsin, and California.

Clitocybe hirneola (Fries) Quél. Peck reports it once from New York.

Clitocybe inornata (Sow.) Gill.

Clitocybe obbata (Fries) Quél.

Clitocybe opaca (With.) Gill. Reported from North Carolina by Curtis.

Clitocybe parilis (Fries) Gill. Reported from North Carolina.

Clitocybe pruinosa (Lasch) Quél. Reported from Ohio by Lea.

Clitocybe subinvoluta (Batsch) Sacc. Reported from Massachusetts by Frost and from New York by Peck.

Clitocybe trullaeformis (Fries) P. Karst. Reported from California by Harkness.

Clitocybe tuba (Fries) Gill. Reported by Peck as rare in New York, but his specimens are quite different from European ones.

Clitocybe tumulosa (Kalchbr.) Sacc. Reported from New York once by Peck.

NORTH AMERICAN SPECIES OF MONADELPHUS

MONADELPHUS CAESPITOSUS (Berk.) Murrill, Mycologia **3**: 192. 1911

Lentinus caespitosus Berk. Lond. Jour. Bot. **6**: 317. 1847.

Agaricus (*Pleurotus*) *caespitosus* Berk. Jour. Linn. Soc. **10**: 287. 1868.

Agaricus monadelphus Morgan, Jour. Cinc. Soc. Nat. Hist. **6**: 69. 1883.

Clitocybe monadelpha Sacc. Syll. Fung. **5**: 164. 1887.

Pleurotus caespitosus Sacc. Syll. Fung. **5**: 352. 1887.

Clitocybe aquatica Banning & Peck; Peck, Ann. Rep. N. Y. State Mus. **44**: 180 (68). 1891.

Armillaria mellea exannulata Peck, Ann. Rep. N. Y. State Mus. **46**: 134 (54). 1893.

Clitocybe parasitica Willcox, Okla. Agric. Exper. Sta. Bull. **49**: 18. 1901.

This species has been much discussed both in America and Europe, some claiming that it is distinct and others that it is only a variety of *Armillaria mellea*. Bresadola says it is the same as *Agaricus tabescens* Scop., figures of which appear to be darker throughout than our plant, although very similar. Peck says it differs from *Armillaria mellea* in its decidedly decurrent lamellae, solid stipe, more agreeable flavor, and the absence of an annulus. Both Curtis and Peck considered it edible, but Sterling said it made him very ill on three different occasions and was a dangerous species. It occurs in dense clusters about old stumps from New York to Kansas and south to Alabama and British Honduras, being more common in the southern United States. Specimens at Kew from Cuba bearing this name are entirely distinct.

MONADELPHUS ILLUDENS (Schw.) Earle, Bull. N. Y. Bot. Gard. **5**: 432. 1909

Agaricus illudens Schw. Schr. Nat. Ges. Leipzig **1**: 81. 1822.

Agaricus (*Pleurotus*) *facifer* Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 421. 1853.

Clitocybe illudens Sacc. Syll. Fung. **5**: 162. 1887.

This large and brilliantly colored poisonous species occurs rather commonly in the eastern United States westward to Kansas and Texas in large clusters about stumps and dying trunks of oak and other deciduous trees, and rarely about pine stumps. For a description, illustration, and notes on its poisonous and luminescent properties, see recent numbers of *Mycologia.*

Bresadola considers *Pleurotus olearius,* which occurs on the olive in southern Europe and has been reported by Maire on pine, the same as this species. If this is true, I should be inclined to regard *Pleurotus lampas, Pleurotus noctilucens,* and *Panus incandescens* as also forms of the same widely distributed highly phosphorescent plant.

Monadelphus marginatus (Peck) comb. nov.

Clitocybe marginata Peck; V. S. White, Bull. Torrey Club **29**: 558. 1902.

Described from specimens found growing in clusters about a decaying stump at Mt. Desert, Maine, in September. There is one plant at Albany and it appears quite distinct. The description, including spore measurements, reminds one of *M. illudens,* with the exception of the color, which is bay-red verging to mahogany. Miss White made an excellent colored sketch of the plant, with notes, which she deposited at the New York Botanical Garden.

Monadelphus revolutus (Peck) comb. nov.

Clitocybe revoluta Peck, Ann. Rep. N. Y. State Mus. **46**: 103 (23). 1893.

Collected once on buried wood in woods at Alcove, New York, and distributed by Shear. It is densely cespitose, with whitish surface and very crowded, narrow, adnate or slightly decurrent lamellae.

Monadelphus sphaerosporus (Peck) comb. nov.

Clitocybe sphaerospora Peck, Bull. Torrey Club **36**: 331. 1909.

Described from specimens collected under oaks at Claremont, California, in January. The species greatly resembles *M. illudens,* but the spores are about twice as large. It also occurs on eucalyptus.

Sequoia Canyon, Marin County, California, *Alice Eastwood 30;* Stanford University, California, *Dudley 157, Miss A. M. Patterson 12;* Santa Barbara, California, *O. M. Oleson 51, 127.*

NEW YORK BOTANICAL GARDEN.